In The Claims

1. (Currently Amended) A method of ~~transporting data~~ preparing data for transmission over a synchronous digital network, said method comprising the steps of:

generating in parallel a plurality of ~~synchronous~~ virtual containers, each to be transmitted over said synchronous digital network at a lower bit rate than a bit rate of said data to be transmitted, each said virtual container having a payload section and a path overhead section;

associating said plurality of virtual containers with each other by means of inputting ~~assigning~~ association data ~~describing said association~~ into said path overheads of said plurality of virtual containers; and

inputting said ~~transported~~ data to be transmitted into said payloads of said plurality of virtual containers~~; and~~

~~outputting said plurality of associated virtual containers onto a synchronous digital network~~.

2. (Currently Amended) The method as claimed in claim 1, wherein said plurality of associated virtual containers are transmitted over ~~output onto~~ said synchronous digital network substantially in parallel.

3. (Original) The method as claimed in claim 1, wherein said step of associating said plurality of virtual containers with each other comprises inserting said association data into a plurality of payloads of said plurality of virtual containers, said association data permitting recovery of the original association at a destination end.

4. (Currently Amended) The method as claimed in claim 1, wherein said step of inputting said ~~transported~~ data to be transmitted into said payloads of said plurality of virtual containers comprises byte interleaving bytes of a frame of said ~~transported~~ data to be transmitted between said ~~plurality of~~ payloads.

5. (Currently Amended) The method as claimed in claim 1, wherein said plurality of virtual containers are generated as a plurality of streams of virtual containers and said step of associating said plurality of virtual containers with each other comprises associating ~~a plurality of~~ said plurality of streams of virtual containers with each other.

6. (Currently Amended) The method as claimed in claim 1, wherein said plurality of virtual containers are generated as a plurality of streams of virtual containers, and said step of associating said plurality of virtual containers together by means of ~~assigning~~ inputting association data comprises ~~adding~~ inputting [[a]] stream [[of]] identification data to each said virtual container, said steam identification data identifying which of said plurality of streams said virtual container belongs to.

7. (Currently Amended) The method as claimed in claim 1, wherein said plurality of virtual containers are generated as a plurality of streams of virtual containers and said step of associating said plurality of virtual containers together by means of ~~assigning~~ inputting association data comprises ~~including~~ inputting [[a]] sequence identification data to ~~individual ones of~~ each said plurality of virtual containers, said sequence identification data designating a sequence in which said individual virtual containers are generated with respect to each other.

8. (Currently Amended) The method as claimed in claim 7, wherein said ~~plurality of virtual containers are generated as a plurality of streams of virtual containers and said step of associating said plurality of virtual containers together by means of assigning association data comprises assigning to individual ones of said plurality of virtual containers a~~ sequence identification data ~~comprising~~ comprises a cyclically repeating code ~~data~~.

9. (Currently Amended) The method as claimed in claim [[1]] 8, wherein said ~~plurality of virtual containers are generated as a plurality of streams of virtual~~

~~containers and said step of associating said plurality of virtual containers together by means of assigning association data comprises assigning to individual ones of said plurality of virtual containers a~~ cyclically repeating code sequence ~~having~~ has a repetition period of at least 2 N+1, where N is the ~~repetition number of sequentially received virtual container payloads in a single stream.~~ number of frames generated in a period of time equivalent to a maximum differential delay expected between virtual containers.

10. (Currently Amended) ~~The method as claimed in claim 1, wherein the said plurality of virtual containers are generated as a plurality of virtual container streams and said step of associating said plurality of virtual containers together by means of assigning association data comprises utilizing a path trace byte in a virtual container overhead as a stream identifier data for identifying a virtual container as belonging to a particular said virtual container stream.~~ The method as claimed in claim 6, wherein said stream identification data is input into a path trace byte of each said virtual container.

11. (Currently Amended) The method as claimed in claim [[1]] 7, wherein ~~a said plurality of virtual containers are generated as a plurality of streams of virtual containers and said step of associating said plurality of virtual containers together by means of assigning association data bytes comprises including a sequence identification data in individual ones of said plurality of virtual containers,~~ said sequence identification data ~~designating a sequence in which said individual virtual container is generated within a said stream of virtual containers, said sequence identification data being carried within a K3 byte of an overhead section of said virtual container.~~ is input into a K3 byte of each said virtual container.

12. (Original) The method as claimed in claim 1, wherein said plurality of virtual containers are generated as a plurality of streams of virtual containers and said step of associating said plurality of virtual containers together by means of

assigning association data comprises assigning to individual ones of said plurality of virtual containers a sequence identification data comprising a code data extending over a plurality of said virtual containers of a said stream, for identifying a position of each said virtual container within said virtual container stream.

13. (Currently Amended) ~~Apparatus for incorporating data input at a first data rate into a plurality of streams of synchronous digital hierarchy virtual containers each output at a second data rate, said apparatus comprising:~~

~~means for continuously generating a plurality of virtual containers in parallel;~~

~~means for generating data describing an association of said plurality of virtual containers, and for assigning said association data to said plurality of associated virtual containers; and~~

~~means for inserting said first data rate data into said plurality of payloads of said plurality of virtual containers.~~ Apparatus for preparing data for transmission over a synchronous digital network, said apparatus comprising:

a virtual container generator arranged to generate in parallel a plurality of synchronous virtual containers, each to be transmitted over said synchronous digital network at a lower bit rate than a bit rate of said data to be transmitted, each said virtual container having a payload section and a path overhead section;

a virtual container associator arranged to associate said plurality of virtual containers with each other by means of inputting association data into said path overheads of said plurality of virtual containers; and

a data inputter arranged to input said data to be transmitted into said payloads of said plurality of virtual containers.

14. (Currently Amended) A method of recovering data from a plurality of ~~synchronous~~ virtual containers received over a synchronous digital network, said method comprising the steps of:

receiving said plurality of virtual containers each said virtual container having a payload section and a path overhead section;

reading ~~identifying~~ association data from said path overheads of said plurality of virtual containers, said association data indicating an association between ~~individual ones of~~ said plurality of virtual containers;

reading data bytes from ~~each~~ said payloads of said plurality of associated virtual containers; and

re-assembling said data from said plurality of read payload data bytes in response to said indicated association.

15. (Currently Amended) The method as claimed in claim 14, wherein said ~~process~~ step of reading ~~said~~ data bytes from said payloads comprises reading ~~a plurality~~ data bytes of said payloads in a byte interleaved manner.

16. (Currently Amended) The method as claimed in claim 14, wherein said ~~step of identifying an~~ association data ~~from each of said plurality of virtual containers~~ comprises ~~reading a plurality of~~ stream identification data ~~from said plurality of virtual containers, said stream identification data~~ designating which of a plurality of streams of virtual containers said associated virtual containers belong to.

17. (Currently Amended) The method as claimed in claim 14, wherein said ~~step of identifying an association data between said plurality of virtual containers comprises reading a plurality of~~ association data comprises sequence identification data designating where in a sequence of virtual containers ~~each~~ an individual virtual container belongs.

18. (Currently Amended) The method as claimed in claim 14, wherein said step of receiving ~~a plurality of~~ said plurality of virtual containers comprises receiving a plurality of separate streams of associated virtual containers simultaneously.

19. (Original) The method as claimed in claim 14, wherein said step of reading data bytes from each payload of said plurality of associated virtual containers comprises reading said data bytes substantially in parallel from a plurality of virtual containers of a same sequence identification from a plurality of associated virtual container streams.

20. (Currently Amended) The method as claimed in claim [[14]] 16, ~~wherein said step of receiving a plurality of said virtual containers comprises receiving a plurality of separate streams of associated virtual containers, and said step of identifying an association data from said plurality of virtual containers comprises inspecting~~ wherein said stream identification data is read from a path trace byte of each of ~~a plurality of~~ said plurality of virtual containers~~, and distinguishing from which of a set of said streams of virtual containers said individual virtual containers belong, from said read path trace data bytes~~.

21. (Currently Amended) The method as claimed in claim [[14]] 7, ~~wherein said step of receiving a plurality of virtual containers comprises receiving a plurality of separate streams of associated virtual containers, and said step of identifying an association data from said plurality of virtual containers comprises reading a plurality of~~ sequence identification data is read ~~designating where, in a stream of said virtual containers, a said virtual container belongs, said sequence data being read~~ from a K3 byte of each of [[a]] said plurality of virtual containers.

22. (Currently Amended) A method of recovering data frames carried in payloads of a plurality of ~~associated synchronous digital hierarchy~~ virtual containers of a synchronous digital network, said method comprising the steps of:

for each said virtual container:

reading ~~data~~ association data from a path overhead of said virtual container, said association data indicating an association between said virtual container and other ones of said plurality of virtual containers[[;]]

allocating a memory storage area for storing a payload of said virtual container;

inputting said virtual container payload into said memory area; and

reading ~~said~~ data from said memory area in parallel with data read from other ~~said~~ memory areas corresponding to payloads of other ~~said virtual containers~~ ones of said plurality of virtual containers, thereby to recover said data frames.

23. (Currently Amended) The method as claimed in claim 22, wherein a said data frame is distributed between said plurality of virtual containers and said step of, for each said virtual container, reading data from said memory area in parallel with data ~~of other virtual containers~~ comprises:

for each said memory area, setting a read pointer to a memory location of said memory area;

wherein said ~~plurality of~~ read pointers are set to said memory locations such that successive bytes of said data frame are read from said ~~plurality of~~ memory locations in sequence.

24. (Currently Amended) The method as claimed in claim 22, further comprising the step of assembling said data frame from said parallel read data.

25. (Currently Amended) The method as claimed in claim 22, wherein said data frames comprises an OSI layer 2 data frames.

26. (Currently Amended) A method of recovering a data block carried in payloads of a plurality of streams of ~~payloads of a plurality of associated synchronous digital hierarchy~~ virtual containers of a synchronous digital network, said method comprising steps of:

~~receiving a plurality of streams of said plurality of associated virtual containers;~~

reading association data from path overheads of virtual containers of each of said plurality of streams, said association data indicating an association between said plurality of virtual containers;

~~for each said received virtual container stream~~ allocating a ~~corresponding~~ respective memory area for storage of ~~data~~ payloads of virtual containers of each said stream;

storing ~~said plurality of~~ virtual container payloads in said ~~corresponding allocated~~ respective memory areas in dependence on said association; and

reading individual bytes of said plurality of stored virtual container ~~data~~ payloads in sequence to ~~reconstruct~~ recover said data block.

27. (Original) The method as claimed in claim 26, wherein said step of reading individual bytes of said plurality of payloads comprises;

for each said memory area, setting a read pointer to a memory location corresponding to a next data byte of said data block to be read, contained within that data payload; and

reading said data byte once a preceding data byte of said data block has been read from a memory location of another said memory area.

28. (Original) The method as claimed in claim 26, wherein said step of reading individual bytes of said plurality of payloads comprises reading bytes from each of a plurality of said memory areas in which said virtual container payloads are stored.

29. (Currently Amended) Apparatus for recovering data from a plurality of ~~synchronous digital hierarchy~~ virtual containers of a synchronous digital network ~~containing said data~~, said ~~means~~ apparatus comprising:

a random access memory configured into a plurality of individual memory areas allocated for storage of payloads of said plurality of virtual containers;

a data processor ~~means~~ operating to ~~identify an~~ read association data from path overheads of each of said virtual containers, said association data indicating an association ~~of~~ between said plurality of virtual containers; and

a data processor arranged to generate ~~means for generating~~ a ~~plurality of~~ read pointers for each said plurality of individual memory areas, said read pointers enabling data to be read from a ~~operating to successively read a~~ plurality of memory locations of said memory areas, thereby to recover said ~~for recovering said~~ data from said plurality of virtual containers[[.]], said read pointers being generated in dependence on said association data.

30. (Cancelled)

31. (Cancelled)

32. (Previously Presented) A method of transporting data over a synchronous digital network, said method comprising the steps of:

generating in parallel a plurality of synchronous virtual containers, each at a lower bit rate than a bit rate of said data, each said virtual container having a payload section;

associating said plurality of virtual containers with each other by means of assigning association data describing said association into said plurality of virtual containers;

indicating for each virtual container the time at which each virtual container was generated relative to other associated virtual containers;

inputting said transported data into said payloads of said plurality of virtual containers; and outputting said plurality of associated virtual containers onto a synchronous digital network,

wherein data indicating the time at which each virtual container was generated relative to other associated virtual containers is incorporated over several virtual containers by utilizing one or more bits from each successive virtual container of an association of virtual containers.

33. (Previously Presented) A method as claimed in claim 32, wherein indicating a time at which each virtual container was generated relative to other associated virtual containers is incorporated over several virtual containers by utilizing one or more bits from the payload of each successive virtual container of an association of virtual containers.

34. (Previously Presented) A method as claimed in claim 32, wherein data indicating the time at which each virtual container was generated relative to other associated virtual containers is incorporated over several virtual containers by utilizing one or more bits from the overhead each successive virtual container of an association of virtual containers.

35. (Previously Presented) A method as claimed in claim 1, wherein each association of virtual containers is identified by a path trace byte in the overhead of each of said associated virtual containers.

36. (Previously Presented) The method as claimed in claim 1, wherein data indicating the time at which each virtual container was generated relative to other associated virtual containers is provided by a sequence marker for each virtual container, and wherein the maximum differential delay expected between virtual containers at a destination in said synchronous digital network determines the number of frames over which a sequence marker must increment before it is repeated, the sequence marker being incremented every 2N+ 1 frames wherein N is the number of frames generated in a time equivalent to the maximum differential delay.